

CLAIMS

I claim:

1. A configuration for managing collection of samples and collecting, preserving, integrating, processing and communication of information at locations that may be remote from a fixed power source, comprising:

a client-server system comprising:

at least one portable device having at least some of the capabilities of a personal computer;

wherein said portable device may be used for said collecting, preserving, integrating, processing and communication of at least some of said information; and

at least one computer;

wherein said computer is available to communicate with said portable device, and

wherein said computer may function as said server to post-process data and to run pre-specified software applications;

at least one instrumentation device,

wherein said instrumentation device may communicate directly with said portable device, said computer or another said instrumentation device;

at least one hardware interface,

wherein said hardware interface may be employed between said instrumentation device and said portable device, between said instrumentation device and said computer, between said portable device and said computer, and between two or more items of said instrumentation, of said portable device, and of said computer;

at least one software interface,

wherein said software interface may be employed between said instrumentation device and said portable device, between said instrumentation device and said computer, between two or more items of said instrumentation, between said portable device and said computer, and within said portable device, within said computer and within said instrumentation device;

at least one software program for running a Geographic Information System (GIS), said program accessible to at least one of said portable device, said computer and said instrumentation, wherein said GIS provides geo-spatially referenced attribute data that expedites the resolution of spatial relationships;

at least one communications device, wherein said communications device facilitates communication among at least said portable device, said computer and said instrumentation device; and

at least one device to provide coded labels, wherein said device to provide coded labels facilitates inventorying and tracking of any of said samples that are physical samples.

2. The configuration of claim 1 in which said communications devices are selected from the group consisting essentially of: laptop computers, cellular telephones, satellite telephones, two-way radios, Personal Digital Assistants (PDAs), cameras, wireless communication devices, land lines, encryption devices, fiber optic wireless devices, infrared wireless devices, RF wireless devices, and combinations thereof.

3. The configuration of claim 1 in which said instrumentation device is selected from the group consisting essentially of: cameras, digital cameras with video and audio capabilities, sensors, instruments, optical scanners, analog-to-digital (A/D) converters, timers, clocks, inclinometers, altimeters, thermometers, barometers, compasses, differential global positioning systems (GPS), laser range finders, radars, LADARs, sonar devices, spectrometers, digital signal processors (DSPs) and combinations thereof.

4. The configuration of claim 1 in which said variety of sources is selected from the group consisting essentially of: specialized data entry forms, aerial photographs, mapping programs, Geographic Information System (GIS) data, GIS data

compliant with Federal Geographic Data Committee (FGDC) and Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) standards, GPS data, manually entered data, video data, audio data, analog data, digital data, and combinations thereof.

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5. The configuration of claim 1 in which said portable device is selected from the group consisting essentially of: laptop computers, personal computers, PDAs, purpose-built data collection devices, and combinations thereof.

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6. The configuration of claim 1 in which said computer is selected from the group consisting essentially of: personal computers, laptop computers, desktop computers, mini-computers, mainframe computers, and combinations thereof.

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7. The configuration of claim 1 in which said device to provide coded labels provides at least one bar code.

8. A method for managing the collecting, preserving, integrating, processing and communication of information at locations remote from a fixed power source, comprising:

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establishing requirements for said managing;

selecting a mix of hardware and software to meet said requirements;

procuring said hardware and software; and

integrating said hardware and software,

wherein said integrating facilitates said collecting, preserving, integrating,

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processing and communicating of said information.

9. The method of claim 8 further managing collection of samples by identifying said samples by a code, a date/time stamp associated with said code, and by a collection location associated with said code.

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10. The method of claim 8 further comprising time tagging said information.

11. The method of claim 8 further comprising merging location data with said information.
- 5 12. The method of claim 11 in which said location data is provided at least in part from GPS data provided by least one GPS receiver incorporated as part of said hardware.
- 10 13. The method of claim 8 in which said integrating is performed at least in part using commercial-off-the-shelf (COTS) software.
14. The method of claim 8 in which said integrating further comprises using interactive databases as part of said software uploaded on at least one computer incorporated as part of said hardware.
- 15 15. The method of claim 8 in which said software facilitates access to at least one Geographic Information System (GIS).
- 20 16. The method of claim 8 in which said integrating is of at least two discrete pieces of said information, said integrating accomplished via the execution of a single step.
- 25 17. The method of claim 16 in which said single step is selected from the group consisting essentially of: clicking a mouse, pushing a button, activating a switch, entering a command into a computer, touching a video screen, a voice command, activating a tone, employing a source of electromagnetic energy, and combinations of the above.
- 30 18. The method of claim 16 in which said discrete pieces of information include at least data on location of collection of said information and time of collection of said information.